A New Species of *Stachyphrynium* (Marantaceae) from Borneo

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Abstract

Stachyphrynium calcicola, a new species of Marantaceae, was recently discovered in the Bau limestone area, Sarawak. It also occurs in Kalimantan. The new species is described and illustrated and the uses of Bornean Marantaceae are given.

Introduction

During a recent inventory of the flora of the limestone hills at Bau, Sarawak, a species was discovered (Poulsen *et al.*, 2004), which matched other collections in Borneo but none of the known types of species of Marantaceae. The new taxon is clearly a *Stachyprynium*, because the sepals are very short relative to the corolla tube, whereas in *Phacelophrynium* K.Schum. and *Phrynium* Willd., the sepals are half the length of the corolla tube or longer.

In Borneo, the most recent revision of Marantaceae included only those from Sabah (Clausager & Borchsenius, 2003). The earliest account of the Bornean species by Ridley (1903) included two species, *Phrynium parviflorum* Roxb. (which is synonymous with *Stachyphrynium placentarium* (Lour.) Clausager & Borchs.) and *Phrynium fissifolia* Ridl. Existing accounts for nearby areas, include those for the Malay Peninsula (Ridley, 1899; Holttum, 1951), and the Philippines (Ridley, 1909). The largest part of Borneo, Kalimantan, is also the least studied and an intensified inventory on Marantaceae in Kalimantan with a subsequent flora account for Borneo is therefore much needed, not least because several species are useful to the indigenous communities (Christensen, 2002). As none of 13 species of Marantaceae recognized in the account for Sabah (Clausager & Borchsenius, 2003) are endemic to Sabah, this account is meanwhile a useful tool for the identification of species elsewhere in Borneo.

In Sabah, three species of *Stachyphrynium* are presently recognized (Clausager & Borchsenius, 2003): *S. borneense* Ridl. is widespread in Borneo and may be synonymous with *S. sumatranum* (Miq.) K.Schum.; *S. latifolium* (Blume) K.Schum. is widespread in the Malesian region (in Sabah it is found east of the Crocker Range, and a recent collection (*Poulsen 2301* from Mulu) confirms it from Sarawak west of the main range); and *S. placentarium* is widespread in SE Asia.

A fourth species, *Stachyphrynium lancifolium* Suksathan & Borchs., was recently described from Brunei (Suksathan & Borchsenius, 2003) and this species also occurs in Sarawak. The new species described below is consequently the fifth Bornean species of *Stachyphrynium* K. Schum.

In the description, the terminology of the inflorescence is taken from Clausager and Borchsenius (2003), as there still remains uncertainty as to the derivation of the inflorescence and its structure (see Andersson, 1976, 1981, 1998; Kunze, 1985, 1989).

Stachyphrynium calcicola A. D. Poulsen & Clausager ***sp. nov.***

Stachyphrynio borneensi similis in foliorum statura formaque, inflorescentia elongata differt. Praeterea *S. lancifolio* similis ac habitu generali ac inflorescentia elongata necnon corollae tubo longissimo, sed foliorum forma oblongo-elliptica nec lanceolata, inflorescentia multo maiore ramosa laxa, corollae lobis multo latioribus, staminodiis exterioribus maioribus differt.
Typus: Malaysia, Borneo, Sarawak, Bau area, Kampung Skiat (1°23´N; 110° 12´E), 30 June 2003. *Poulsen, Jugah, Jais & Clausager 2026* (holo SAR; iso AAU, K, L, Sarawak Biodiversity Centre Flora Depository).

Figure 1.

Rhizomatous ground herb to 50 cm tall. *Leaves* basal, 2–5 per shoot, distichous; sheath to 16 cm long, greenish; petiole 8–18 cm long, greenish, glabrous; pulvinus 10–15 mm long, glabrous; lamina oblong-elliptic with entire margin, apex acuminate, 26.5 by 9 cm, glabrous, green. *Inflorescence* interfoliar, erect to 37 cm long; peduncle 1–17 cm long, glabrous, pale yellowish green; synflorescence lax, spiciform, simple or branched, to 20 cm; individual bracts elliptic to oblanceolate, to 3 by 0.8 cm, light green; bracts sub-distichously arranged, each covering a special paraclade, these with 1–2 flower pairs, each associated with a 2-keeled prophyll, oblong-lanceolate, 12–19 by 3.5–5.5 mm, and a lanceolate interphyll 8–15 by and 2.5–4 mm. *Flowers* c. 30–36 mm long, cream white except for a yellow touch on the mouth of the corolla tube. Sepals 3, triangular, free, sparsely hairy at base, 4 by 1 mm. Petal lobes subulate,

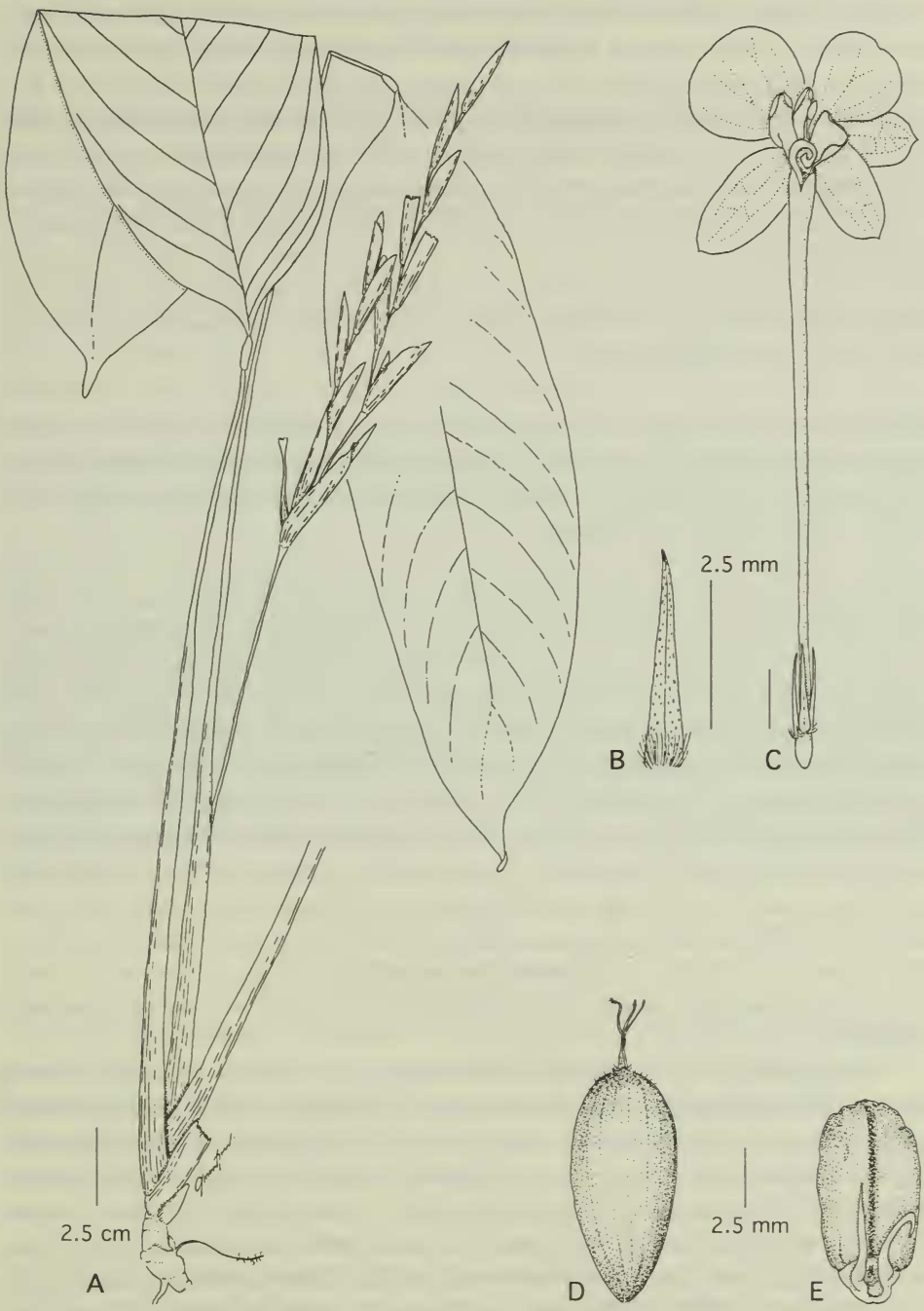

Figure 1. ***Stachyphrynium calcicola*** A.D.Poulsen & Clausager
A. habit; B. sepal; C. flower; D. fruit; E. seed with bilobed aril. Drawn by Piyakaset Suksathan from the type (*Poulsen et al. 2026*).

c. 5 by 3 mm; corolla tube 25–26 mm long, yellow on the inside. Staminodes and stamen basally adnate to the corolla tube; outer staminodes 2, subequal, obovate, with petaloid lobe 5–6 by 4–5 mm; cucullate staminode with the free part 3 by 1.5 mm; callose staminode truncate with the free part 2.5 by 2.5 mm; fertile anther 2.5 mm long with petaloid cucullate appendage 3 by 1.5 mm; style hooked with the free part 2.5 mm long; ovary 2.5 mm long. *Fruits* 10 by 4 mm, with one seed and persistent calyx, 3.5 mm. *Seeds* 8 by 3.8 mm, aril 2-appendiculate.

Distribution: Endemic in Borneo in lowland forest. Southern Sarawak and West and Central Kalimantan.

Ecology and etymology: The type collection was found in open forest with bamboo, growing near limestone outcrops and a small stream. Labels on most other collections mention presence of limestone in the habitat, which is the reason for the choice of epithet.

Notes: *Stachyphrynium calcicola* is distinguished from all other *Stachyphrynium* species from Borneo by the elongated and lax inflorescence. At the type locality this is at the most with two well-developed branches but some of the Kalimantan material (*Burley et al. 3239*) has at least six well-developed branches. In Borneo, the inflorescence of *S. calcicola* bears most resemblance to *S. lancifolium*, but can be distinguished simply by its much broader leaves. The leaves of *S. calcicola* resemble the widespread *Stachyphrynium borneense* Ridl., but in this case the difference between inflorescences is pronounced as *S. borneense* has compact inflorescences with red bracts, and *S. calcicola* has elongate, lax inflorescences with light green bracts. *S. latifolium* and *S. placentarium* are much larger plants than *S. calcicola*; the former also differs in the separate and simple inflorescence with water-containing bracts; the latter by its capitate inflorescence with pointed and stiff bracts.

In Sarawak, the leaves of most Marantaceae species are used by local people for wrapping food and for roofing (Christensen, 2002). One collection of *S. calcicola* from Sarawak (*Jamree et al. S.73204*) gives the vernacular name *rirek*. *Rirek* or *ririk* is a generic name in some Iban dialects for different species of Marantaceae (H. Christensen, *pers. comm.*). Some species that are used as a source of starch (*Maranta arundinacea* L.) are called *mulung ririk*, others where the leaves are used are called *daun* (meaning leaf) *ririk* (Christensen, 2002). The most commonly used big-leaved species, *Phacelophrynium maximum* (Blume) K. Schum, is called *daun lung besai* in one Iban dialect (Christensen, 2002). Another small-leaved species, *Schumannianthus acaulis* Suksathan, Borchs. & A.D.Poulsen ined., is also called *daun ririk* in Iban (*Poulsen 1943* from Niah, Sarawak). It is perhaps

surprising that species with small leaves are used. Possibly they substitute when the large-leaved species are not available.

Other specimens examined: SARAWAK. SE slope of Gunung Badug, Bau, lower slope of limestone hill, 300 ft, 1 Apr 1966, *Anderson S.19683* (SAR, K); Gunung Selabor, Upper Sadong Distr., wet place among fallen leaves at foot of limestone hill, 28 May 1975, *Burtt B8210* (E, SAR); Bukit Terebat, Mongkos, Serian, near river bank, sandy soil, 18 Jun 1996, *Jamree, Banyeng & Enjah S.73204* (SAR, KEP n.v., K n.v., L n.v.); Bukit Jebong, Bau, at base of mountain in damp dyke area, forest, 350 ft, 7 Aug 1970, *Lehmann S.29433* (SAR); Gunung Doya, Bau, limestone, 160 m, 26 Feb 2002, *Meekiong Kalu et al. SBC 2234* (Sarawak Biodiversity Centre Floral Depository); Gunung Kawa, Bau, limestone foothill, 200 m, 7 May 2002, *Meekiong Kalu & Stephen J.J. SBC 3128* (Sarawak Biodiversity Centre Floral Depository); Gunung Lanyang, Bau, limestone, rock surface at boulders at foothill on the trail to G. Lanyang, 11 Apr 2002, *Julia Sang et al. SBC 2681* (Sarawak Biodiversity Centre Floral Depository); Gunung Tabai, Bau, limestone, flat area at foothill, 13 Mar 2002, *Julia Sang et al. SBC 2546* (Sarawak Biodiversity Centre Floral Depository); Gunung Berloban, 10 km Tebakang–Tebedu road, limestone cliff, 270 m, 24 Jun 1983, *Yii & Othman S.46243* (K, SAR).
KALIMANTAN. Headwaters of Sungai Kahayan, 5 km NW of Tumbang Sian logging camp, Sikatan Wana Raya logging concession, primary lowland forest, 150 m, 24 Apr 1988, *Burley et al. 798* (A, SAR); West Kalimantan, 5–10 km N of Masa village, 150 km NE of Pontianak. Ridge SW of Gunung Bentuang, mixed dipterocarp forest, sloped area, 700 m, 28 Jun – 6 Jul 1989, *Burley et al. 3239* (A).

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